



**CHESAPEAKE BAY FOUNDATION**  
*Saving a National Treasure*

November 29, 2011

U.S. Environmental Protection Agency  
EPAWest (Air Docket)  
Room 3334  
1301 Constitution Avenue N.W.  
Washington, DC 20004

Re: Docket ID Number EPA–HQ–OAR–2010–0505: Oil and Natural Gas Sector; New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants

To whom it may concern:

On behalf of the Chesapeake Bay Foundation, Inc. (“CBF”) thank you for the opportunity to provide written comments on the United States Environmental Protection Agency’s (“EPA”) proposed air pollution rules for the Oil and Natural Gas Industry, especially those aspects of the rule directed towards natural gas hydraulic fracturing.<sup>1</sup> These comments reflect our concerns regarding the New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP), particularly in their overall permissive treatment and regulation of methane and fugitive emissions.

The CBF is the largest non-profit organization dedicated to restoring the Chesapeake Bay, and represents approximately 226,000 members and e-subscribers. We are active in federal, state, and local legislative and regulatory arenas, to advocating on behalf of the nation’s largest estuary and vital economic and ecological region; the Chesapeake Bay.

The Chesapeake Bay watershed encompasses more than 64,000 square miles, including over 100,000 rivers and streams, stretching from New York to Virginia. The Bay and its

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<sup>1</sup> These written comments are submitted both electronically and by express mail. The electronic version of these comments does not include a DVD referenced below. The DVD is provided by express mail only.

watershed have been recognized by Congress as a “national treasure and resource of worldwide significance.”<sup>2</sup> Accordingly, in May 2009, President Obama issued executive Order 13508 aimed at renewing efforts to protect and restore the Bay’s health, heritage, natural resources, and social and economic value.<sup>3</sup>

As part of CBF’s efforts to ensure the full restoration and long-term protection of the Bay, potential impacts on portions of the bay watershed must be assessed. As such, CBF is acutely aware of the potential impacts the upsurge of natural gas production from unconventional shale formations may have on the Bay. The increase in shale producing activity may prove beneficial as natural gas becomes increasingly viewed as an important transitional fuel that is cleaner and safer than coal and oil. However, the alarming rate at which extraction activities have increased in the Bay watershed gives us great pause as we attempt to understand the full implications of the cumulative nature of these activities.

### General Objections

The potential for air pollution from unconventional natural gas extraction activities, and the associated threats of human exposure and potential health risks, is a leading concern for citizens in areas where hydraulic fracturing has and will occur. In response to this concern, CBF undertook a study of existing natural gas drilling and processing facilities in the Marcellus shale region of Pennsylvania, Maryland, and West Virginia.<sup>4</sup>

CBF hired an infrared videographer who normally works for the oil and gas industry, David Sawyer of Sawyer Infrared Inspection Services. He used a Flir GasFindIR HSX camera

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<sup>2</sup> Chesapeake Bay Restoration Act of 2000, P.L. 106-457, Title II, § 202, 114. 1967 (November 7, 2000).

<sup>3</sup> Executive Order 13508, Chesapeake Bay Protection and Restoration, 74 Fed. Reg. 23099 (May 15, 2009), available at: <http://www.whitehouse.gov/the-press-office/executive-order-chesapeake-bay-protection-and-restoration> .

<sup>4</sup> See CBF’s Bay Daily for November 29, 2011 at [http://cbf.typepad.com/bay\\_daily/2011/11/a-chesapeake-bay-foundation-infrared-video-investigation-of-natural-gas-drilling-and-processing-sites-in-pennsylvania-maryla.html#more](http://cbf.typepad.com/bay_daily/2011/11/a-chesapeake-bay-foundation-infrared-video-investigation-of-natural-gas-drilling-and-processing-sites-in-pennsylvania-maryla.html#more)

that is designed to detect leaks of methane from gas pipelines and equipment. The camera detects not only methane, but also other hydrocarbon gases, including benzene, ethanol, ethylbenzene, heptane, hexane, and toluene.

From May 31 to June 3 2011, Mr. Sawyer worked with CBF to shoot infrared images of 15 natural gas drilling and compressor sites: 13 across Pennsylvania; one in Maryland; and one in Ohio County, West Virginia. Mr. Sawyer's equipment detected gas emissions from 11 of these 15 sites. CBF captured standard video images of the same locations. We then compiled a DVD that contrasts the standard video shots of these locations (in which emissions are invisible) to the infrared videos (in which the emissions look like colored smoke). A copy of that DVD is attached to these comments.<sup>5</sup>

Mr. Sawyer concluded that the emissions shown were most likely methane gas and other hydrocarbon gases. CBF then showed the video to an independent expert, Dr. Robert Howarth of Cornell University,<sup>6</sup> who reached the same conclusion, and suggested there could be a potential health impact from the air pollution. Dr. Howarth said CBF's video provides new evidence for a comprehensive federal study pursuant to the National Environmental Policy Act, i.e., a Programmatic Environmental Impact Statement (PEIS) of the human health and environmental impacts of drilling in the Marcellus Shale. 42 U.S.C. § 4321et seq.

In April 2011, CBF petitioned the White House Council on Environmental Quality and EPA to conduct such a federal study. To date, we have had no response. The development of the Oil and Natural Gas air pollution rule again highlights the need for a PEIS relative to hydraulic fracturing in the Chesapeake Bay Region. Given the exponential increase in the

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<sup>5</sup> See also <http://psehealthyenergy.net/resources/view/198781>; <http://www.youtube.com/watch?v=ov5nkkRDfGQ&feature=youtu.be> (short version); <http://youtu.be/d-ybofaO9wI> (long version).

<sup>6</sup> <http://www.eeb.cornell.edu/howarth>

number of new wells being drilled in this Region, it is imperative that the federal government conduct a PEIS to examine the cumulative effects of natural gas hydraulic fracturing on human health and natural resources. CBF objects to the Oil and Natural Gas rule because such a study has not been done prior to its promulgation.

### Specific Objections

The performance standards are intended to protect public health and welfare, in some cases with an adequate margin of safety, and to promote the goal of “responsible oil and gas exploration.” Yet, the proposed rule pays inadequate attention to those concerns by not focusing directly on methane as an individual pollutant. Rather, the rule chooses to simply control methane indirectly. Additionally, the proposed rule fails to adequately address fugitive emissions in exploratory and delineation wells and relies solely on economic benefit to industry as the basis for ensuring capture of fugitive emissions in other situations. Our DVD, attached hereto, proves otherwise.

Generally, the rule only controls methane when such control happens as a byproduct of a process designed to control other emissions such as VOCs or SO<sub>x</sub>. Language in the preamble states, “Although this proposed rule does not include standards for regulating the Green House Gas (GHG) emissions... we continue to assess these significant emissions and evaluate appropriate actions for addressing these concerns. Because many of the proposed requirements for control of VOC emissions also control methane emissions as a co-benefit, the proposed VOC standards would also achieve significant reduction of methane emissions.” 76 FR 52756. See also 76 FR 52795, Table 8, fn 4.

Section 60.641 of the proposed rule provides the definition of natural gas: Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in

geological formations beneath the earth's surface. The principal hydrocarbon constituent is methane. While this definition includes methane as a constituent of natural gas, the agency chooses to practically ignore methane by focusing instead on VOCs. Moreover, the potential regulation of methane as a GHG emission is not a sound basis for ignoring methane in this rulemaking. GHG regulation is uncertain and, regardless, regulation of methane as a GHG may fail to consider health and welfare effects less directly tied to the mechanisms of climate change. Thus, this decision does not provide the type of consideration of performance standards that is necessary to directly control methane emissions.

Fugitive emissions are also of considerable concern in hydraulically fractured wells, compressors, pneumatic controllers, processors, glycol dehydrators, and storage. The proposed NSPS requires that for wells that are not exploratory nor delineation wells, "reduced emission completion" (REC) technology must be employed. The rule states that emissions from flowback must be minimized by "routing the recovered fluid into storage vessels and routing the recovered gas into a gas gathering line or collection system." Further, the proposed regulation states that operators must utilize "sand traps, surge vessels, separators, and tanks during flowback and cleanout operations to safely maximize resource recovery and minimize releases to the environment."

The proposed rule does not at all consider how methane and other fugitive emissions can bypass the capturing systems. Obtaining a quantity of marketable gas that can be sold is a powerful incentive for capturing fugitives, but the regulation should consider the potential for significant amounts of fugitive emissions to escape capture from these systems. The language does not set percentages or other numeric standards for recapturing amounts or regulate the natural gas emissions outside of recapturing, assuming that such processes are successful.

Again, the CBF video attached to these comments establishes that the industry is not sufficiently limiting the amount of leaks from drilling and processing operations and the full extent of those leaks both current and expected have not been adequately considered in this rule.

While the rule chooses to exclude exploratory and delineation wells from REC, it does regulate them less stringently. Exploratory or delineation wells are defined as wells drilled outside known fields or wells drilled in order to determine the boundary of a field or producing reservoir. EPA recognizes that such wells are not usually located in areas with existing gas gathering lines, so EPA has determined REC technology would not be practical. Under the proposed rule, for exploratory and delineation wells, operators must employ a combustion device, such as a flare, to control emissions from flowback after hydraulic fracturing is performed, except where the use of such a device may result in a fire hazard or explosion. This language raises two main concerns; (1) the language does not clarify when the use of a combustion device may result in a fire hazard or explosion and failure to do so creates potential for the exception to swallow the rule, (2) additionally this language does not at all contemplate what controls may be necessary when an exploratory or delineation well actually strikes or enters a natural gas field.

Under the proposed rule, compressors, pumps, pressure relief devices, valves, flanges, and other equipment in VOC or wet gas service at onshore natural gas processing plants will be required to comply with more stringent leak detection and repair standards to reduce VOC emission from equipment leaks. The language, however, seems to allow for ongoing leaks under 5000ppm HAPs/VOCs. Specifically, the proposed rule states that emissions of pollutants are permitted as long as the amount of a leak does not exceed stated limits. Section 60.5401(b)(2) currently sets the limit. It states “if an instrument reading of 5000ppm or greater is measured, a

leak is detected.” The Agency has proposed to adopt 40 C.F.R. 60, subpart VVa, but did consider the option of making changes in standards for individual components. Subpart VVa is beneficial as it provides a lower amount (ppm) for defining a leak, but these new emission sources have never been subject to federal standards, and each of the components should be considered individually before a rule is established.

#### Conclusion

A federal rule governing air pollution associated with natural gas hydraulic fracturing is greatly needed; however, EPA has failed to fully consider the existing and potential impacts of leaks from hydraulic fracturing. EPA has also failed to fully consider the impact of methane released from drilling and process equipment on human health and the environment. Without a comprehensive PEIS, the rule falls short of EPA’s statutorily mandated directive. CBF asks the Agency to undertake a PEIS of hydraulic fracturing in the Chesapeake Bay Region and to amend this rule accordingly.

Sincerely,



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Enclosure